C. ANALYSIS AREAS

The analysis area is the basic unit of land used in the Forest planning model. These areas are generally noncontiguous and homogeneous, scattered pieces of land possessing similar characteristics Forest land areas having similar physical and biological characteristics are expected to respond in a somewhat uniform way to Management Prescriptions.

A brief description of how analysis areas are defined can best be illustrated through an example. At the highest level of aggregation (Level 1), the area is defined with a broad land characteristic, e g , watersheds In the Malheur model, there are 14 Level 1 identifiers, representing 7 watersheds in each of which there are winter range and non-winter range areas. With each succeeding level of detail, new analysis area groupings are created, each a subset of the next higher level of aggregation. These levels define the existing roading level; the timber working group or species composition; the land class (i e., slope and presence or absence of riparian conditions), the existing condition class, and the age Each level contributes to the uniqueness of a response, output, or economic parameter which distinguishes the analysis area. For the bench marks, which were developed using the Draft FORPLAN model, the hierarchy of identifiers was different See the following description and table B-2

One important consideration used by both the management team and the interdisciplinary team was that the FORPLAN model would be oriented more to providing resource information than site-specific configurations due to model size limitations. This is reflected in the selection of identifiers.

A brief description of the analysis areas used in the Malheur National Forest planning model follows The detailed process of generating analysis areas and land allocations for the revised (watershed based) FORPLAN model is described in "Revised analysis areas for FORPLAN" (Lindley, 3/21/90)

1. Level 1

The Level 1 identifier, in the alternatives, represents the seven major watersheds of the Forest, coupled with the identification of winter range. Thus each watershed is represented by two identifiers, one for winter range (terminating with -WR) and one for other lands (terminating with -OT). See Table B-2 for a list of identifiers and Figure B-1 for a map of the major watersheds.

For the benchmarks, the Level 1 identifier categorizes analysis areas based on the level of existing local roading.

a. Roading adequacy level 1 covers those areas where roads were constructed during the 5 years immediately prior to and including Fiscal Year 1982.

b Roading adequacy Level 2 includes areas where no roads were constructed during the 5 years immediately prior to and including Fiscal Year 1982 and which have some type of road system in place.

c. Unroaded areas are larger than one section in size and provide an 800-foot boundary to any existing road.

Roading adequacy levels were developed from transportation and timber sale maps. The information in this identifier provides a method of reflecting roading need and cost differences for timber entries into different roading categories

2. **Level 2**

The Level 2 identifier in the alternatives represents the level of roading. The identifiers are the same as those used for Level 1 in the benchmarks

For the benchmarks, existing range management intensity is used as the Level 2 identifier. In order to portray accurately the cost and yield differences between allotments, it is necessary to know what the existing management intensity is This identifier provides that information We are most concerned with the present level of structural improvements on the allotments. Since "C" and "D" strategies may have the same level of these improvements, they have been aggregated "Other" in Level 2 denotes analysis areas which are not contained within any range allotments

3. **Level 3**

The Level 3 identifier was used for the alternatives to represent the major watersheds as described for Level 1 without the coupling to winter range. This was done mainly for convenience in operating the Forplan model

This level was not used for the benchmarks.

4. **Working Group**

This level identifies the major vegetative groupings on the Forest and corresponds to the working group identifiers from the Forest Timber Inventory Model The Total Resource Inventory data base prepared in 1980 was used as the basis for the working group, since it is consistent with the timber inventory

The working group specifies the species composition of the timber types, thus allowing stumpage price difference between species to be reflected. It also identifies the nonforested lands that occur on the Forest

The working group identifiers for the alternatives and the benchmarks are the same

5. **Land Class**

Slope is the major component of the land class delineated We selected 0-35 percent and greater than 35 percent as the slope breaks for use in FORPLAN. This information was contained in the Total Resource Inventory System. It was also used for making cost determinations as well as for range and sediment yields and timber management consideration

Land class has also been used to identify riparian areas on the Forest. For the alternatives, a single riparian identifier is used, and the differentiation of anadromous and non-anadromous streams is obtained by reference to the watersheds as identified in levels 1 and 3 The Total Resource Inventory system is used as the basis for this identifier Riparian areas management is a key issue on the Forest and, therefore, it was desirable to have these as separate analysis areas

For the benchmarks, two identifiers were used to represent anadromous and non-anadromous streams, since there was no geographic differentiation available from the other identifiers

6. ***Condition Class***

From a range and timber standpoint, it was necessary to have a fair amount of site specificity built into analysis areas Much of this specificity is reflected in condition class identifiers For timber areas, the analysis areas are delineated by the existing condition of the stand. The nonforest areas are separated by the dominant vegetation that is present These delineators were used to differentiate yield and economic information for FORPLAN

Table B-2 lists the identifier codes used both for the alternatives and the benchmarks. The list of Condition Classes for the alternatives was modified from that used in the benchmarks as follows.

a. Old Growth was included in 2 Story, since the two have almost identical characteristics. Old growth is tracked in the analysis area generation part of the model, and used in the assignment of areas to old growth management.

b. Two classes for lodgepole pine were added (Sawtimber, Seeds and Saps). These replaced the seven classes as used for other working groups, thus reducing the size of the model.

Three other attributes reviewed for possible use as analysis area identifiers were visual quality objectives, soils and range allotments. These were reviewed by the Interdisciplinary Team, but were dropped from consideration. Soils information was found to be in an unusable format in the Total Resource Inventory system. Use of range allotments or visual quality objectives expanded the FORPLAN model to an unusable size.

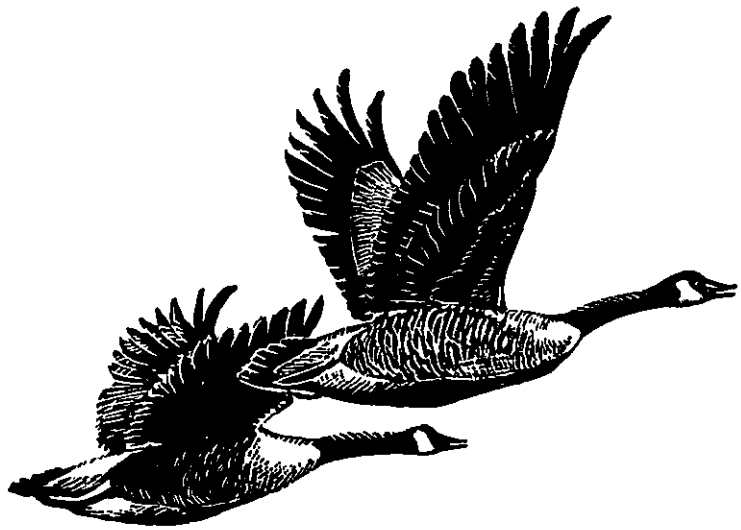

TABLE B-2

ANALYSIS AREA IDENTIFIER CODES (Benchmarks)

Level 1

1. ROADL1 - Roading adequacy level 1
2. ROADL2 - Roading adequacy level 2
3. UNROAD - Unroaded
4. ALROAD - All roading levels
5. WILDNS - Wilderness

Level 2

1. ALOTCD - Range allotment strategy C or D
2. OTHER - All other lands

Level 3

Not used

Working Group

1. P-PINE - ponderosa pine
2. MIXCON - mixed conifer
3. LODGEP - lodgepole pine
4. NONFOR - nonforested
5. ALLWG - all working groups

Land Class

1. 0-35 - Up to 35 percent slope
2. 36+ - Over 35 percent slope
3. RIPAND - Riparian zones - Anadromous
4. RIPNON - Riparian zones - Nonanadromous
5. ALLSLP - All slopes
6. ALLRIP - All riparian zones
7. ALLLC - All land classes

Condition Class

1. MATURE - Mature sawtimber
2. COMTHN - Commercial thin
3. PRETHN - Precommercial thin
4. REFRST - Reforestation
5. 2STORY - Two story
6. NOTRET - No treatment
7. GRASSD - Grass dominant
8. FIRSDG - Fir/sedge
9. MSTMED - Moist meadow
10. DRYMED - Dry meadow
11. RCKLND - Rockland
12. SAGEBD - Sage dominant
13. MESIC - Mesic shrubs and trees
14. JUNBUN - Juniper bunchgrass
15. LOSITE - Unproductive
16. OLDGTH - Old growth
17. ALLCON - All condition classes
18. ALLFOR - All forest classes
19. ALLNON - All non-forest classes

TABLE B-2 (Continued)
ANALYSIS AREA IDENTIFIER CODES (Alternatives)

Level 1

1. FXCTWR - Fox/Cottonwood winter range
2 FXCTOT - Fox/Cottonwood other
3. MFJDWR - Middle Fork John Day winter range
4 MFJDOT - Middle Fork John Day other
5. UPJDWR - Upper John Day winter range
6 UPJDOT - Upper John Day other
7. SFJDWR - South Fork John Day winter range
8. SFJDOT - South Fork John Day other
9. SILVWR - Silvies River winter range
10. SILVOT - Silvies River other
11. MLHRWR - Malheur River winter range
12. MLHROT - Malheur River other
13. NFMHWR - N. Fork Malheur winter range
14. NFMHOT - N. Fork Malheur other

Level 2

1. ROADL1 - Roading adequacy level 1
2 ROADL2 - Roading adequacy level 2
3. UNROAD - Unroaded
4. ALROAD - All roading levels

Level 3

1. FXCT - Fox/Cottonwood
2. MFJD - Middle Fork John Day
3. UPJD - Upper John Day
4. SFJD - South Fork John Day
5 SILV - Silvies River
6 MLHR - Malheur River
7. NFMH - N. Fork Malheur

Working Group

1. P-PINE - ponderosa pine
2. MIXCON mixed conifer
3. LODGEP - lodgepole pine
4. NONFOR - nonforested
5. ALLWG - all working groups

Land Class

1. 0-35 - Up to 35 percent slope
2 36+ - Over 35 percent slope
3. RIPARN - Riparian zones - Anadromous
5. ALLLC - All land classes

Condition Class

1. MATURE - Mature sawtimber
2 COMTHN - Commercial thin
3. PRETHN - Precommercial thin
4. REFRST - Reforestation
5. 2STORY - Two story
6. NOTRET - No treatment
7. GRASSD - Grass dominant
8 FIRSDG - Fir/sedge
9. MSTMED - Moist meadow
10. DRYMED - Dry meadow
11 RCKLND - Rockland
12. SAGEBD - Sage dominant
13. MESIC - Mesic shrubs and trees
14. JUNBUN - Juniper bunchgrass
15 LOSITE - Unproductive
16. - Not used
17. ALLCON - All condition classes
18 ALLFOR - All forest classes
19. ALLNON - All non-forest classes
20. LPPSAW - Lodgepole sawtimber
21. LPPSAS - Lodgepole seeds and saps